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CORRESPONDENCE

Early progression of proximal intramural hematoma to overt aortic dissection during initial computed tomographic evaluation

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A 74-year-old woman presented to the emergency department with acute chest pain radiating to the back. As acute aortic syndrome was clinically suspected, computed tomography (CT) angiography was performed. Immediately after performing the arterial-phase scan, the patient suddenly became lethargic and developed transient focal seizure-like involuntary movement in the left upper extremity. Her blood pressure was 80/60 mmHg. The delayed-phase scan was obtained at a delay of 150 seconds from the beginning of contrast injection. After performing complete scans, she returned from the CT room and recovered well by volume administration. On precontrast CT examinations, a crescent-shaped area along the wall of the aorta, which showed higher attenuation than that of the blood, was detected (Figure 1A). The arterial-phase CT scan demonstrated an acute proximal intramural hematoma (IMH) (Figures 1A and 1C) with an ulcer-like projection (ULP) 1 cm distal to the origin of the left subclavian artery (Figure 1B). The delayed-phase CT scan demonstrated conversion to overt aortic dissection of the ascending aorta, aortic arch, and descending thoracic aorta (Figure 1D). Resection and graft replacement of the ascending aorta was performed using a 28 mm woven Dacron graft. A staged subclavian to carotid transposition and endovascular stent procedure was performed for coverage of the ULP. The patient's postoperative course was uneventful, and she was discharged from the hospital on Postoperative Day 20.

Aortic IMH is the potentially life-threatening formation of hematoma in the aortic wall. This condition is among the spectrum of pathologies that comprise acute aortic syndrome and carries a risk of progression to aortic dissection, aneurysm, rupture, and other complications.[1] Although early and approximate treatment of IMH is essential for patient survival, there has been a controversy regarding the treatment of IMH, especially when it involves the ascending aorta. Recently, some studies, primarily from Korea and Japan, have suggested that the evolution of proximal IMH appears to be more benign than that of aortic dissection, and reported low mortality rates and favorable long-term results in medically treated stable proximal IMH.[2,3] However, according to the International Registry of Aortic Dissection, proximal IMH may be associated with similar morbidity and mortality rates to those

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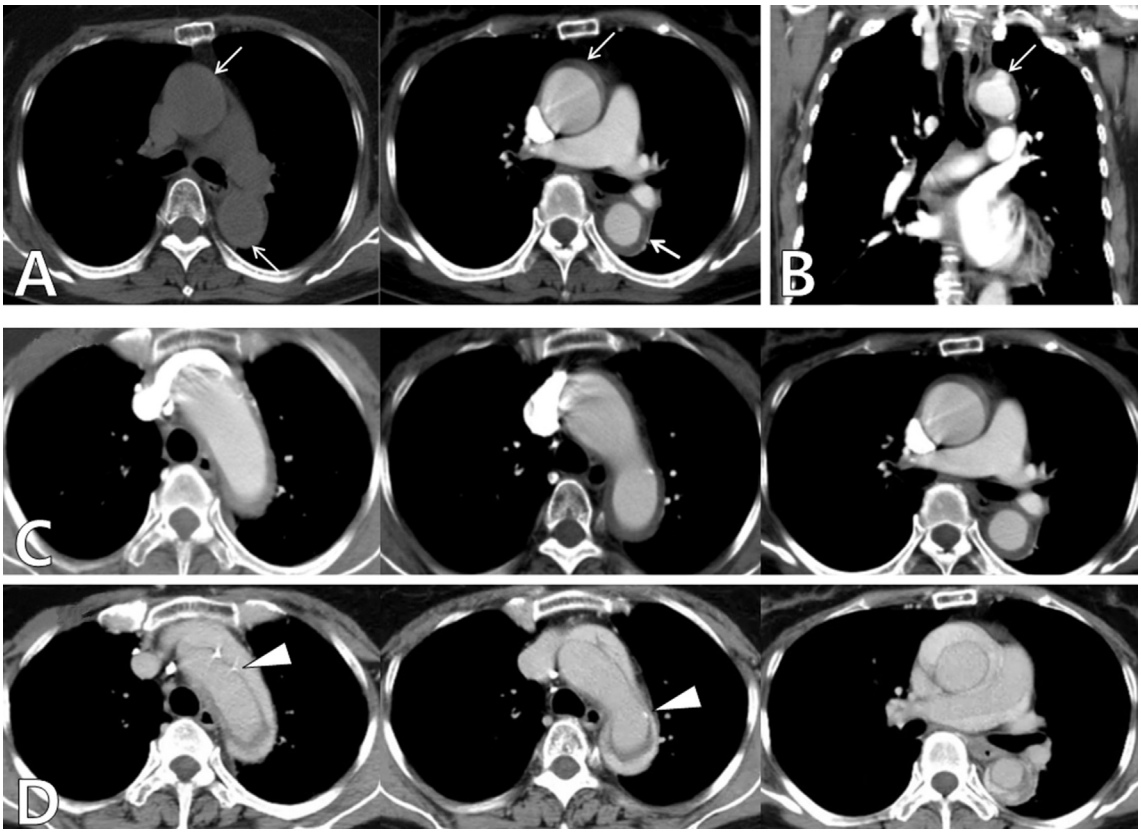

Figure 1 Progression of intramural hematoma to overt aortic dissection between arterial- and delayed-phase CT scan. (A) Evidence of proximal intramural hematoma. On precontrast CT, the arrows indicate continuous high-attenuation thickening of the aortic wall secondary to intramural hematoma. On arterial-phase CT, the arrows indicate less conspicuous intramural hematoma against contrast-enhanced aortic lumen; (B) on arterial-phase CT, the arrow indicates an ulcer-like projection 1 cm distal to the origin of the left subclavian artery; (C) arterial-phase CT demonstrates intramural hematoma involving the ascending aorta, aortic arch, and descending thoracic aorta; and (D) on delayed-phase CT, the arrowheads indicate calcifications within intimo-medial flap of aortic dissection. CT = computed tomography.

associated with aortic dissection, and an early surgery should be considered because it tends to develop classic overt dissection or rupture.[1] There have been several studies analyzing the predictors for the development of complications. ULP, enlarged aortic diameter, increased hematoma thickness, pericardial/pleural effusion, and Stanford Type A classification are associated with progression to complications.[4,5] The temporal pattern of occurrence of complications and its prognostic impact have not been investigated in detail. Thus, physicians should be aware that typical aortic dissection or sudden death can occur at any time during hospitalization. We describe a case of a patient with proximal IMH with ULP that progressed to an overt aortic dissection during an initial CT examination. It could be a rare coincidence that the development of complications occurred during an initial CT evaluation, but the CT images of this case may demonstrate the potential instability of proximal IMH in the hyperacute stage.

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